Chapter 4
WLPPs in a Broader Policy and Economic Context

Agri-environmental payments on working lands represent an opportunity to address negative environmental impacts associated with agriculture **and** perhaps benefit agriculture economically. Given the diversity of U.S. agriculture, maximizing program performance would require that program contracts be tailored to the specific circumstances of individual farms. Creating that kind of flexibility in a "one size fits all" set of program guidelines is not easy. Policymakers face a myriad of decisions, any one of which could have important implications for program performance.

From the government's point of view, enrolling producers in WLPPs is a lot like hiring a contractor. The program, as first encountered by producers, is more like a "request for proposals" than a simple offer to pay for services. Through the request for proposals, program decisionmakers gather information about the conservation actions producers are willing to take and the level of payment they are willing to accept. The government, in turn, awards contracts based on an assessment of the producer's ability to generate environmental benefits (or achieve other program goals) and the cost of the contract. The trick, then, is to develop a request for proposals that is attractive to those producers who are best suited for the job, and to let the proposal process itself do the job of sorting the best from the rest.

This report uses a conceptual framework and simulation analysis to isolate individual policy design decisions and assess the effect of each on program performance. The truth is, however, that design decisions can rarely be made independently of one another. Moreover, previous chapters focused on issues relating to agri-environmental program design without considering the broader economic, policy, and research contexts. Programs often have impacts that are different or broader—temporally, geographically, or throughout the economy—than originally intended. WLPPs also interact with other programs, including other agri-environmental programs, commodity programs, and some nonagricultural programs. We revisit some of the key lessons of previous chapters, focusing on their inter-relatedness, and raise some of these broader questions here because their answers, ultimately, will be part of the story surrounding WLPP design.

Designing WLPPs involves a suite of interrelated decisions. The basic elements of policy design—budget levels, eligibility rules, enrollment screening mechanisms, and participation incentives—can be combined in many ways to establish an agri-environmental program. Design decisions interact on at least three levels:

- If the budget is limited—as it is in all existing agri-environmental programs—eligibility rules, enrollment screening, and participation incentives must be coordinated at least to the extent that spending limits are not exceeded.

- In the case of multiple objectives, program decisions made in service of one objective may preclude achieving another objective.
    - Stewardship payments likely reduce the level of new conservation effort that can be achieved (i.e., new practices that can be installed/adopted) given budget limitations.
    - Bidding on financial assistance—if it is truly competitive—will stretch conservation budgets by lowering the cost of individual contracts, but the resulting payments are unlikely to provide much in the way of direct support for farm income.
    - Environmental objectives can complement or conflict with each other—reduced runoff of nutrients to surface water could coincide with increased leaching to ground water. Conversely, efforts to reduce soil erosion could also reduce nutrient losses. Simulation results suggest that environmental attributes tend to increase or decrease in tandem.
- Cost-effective environmental gains are contingent on the careful coordination of eligibility rules, payment incentives, and enrollment screening to attract only those producers who can deliver environmental gain at low cost.

It is difficult to find the appropriate incentive structure that results in the "right" amount of quality applications. Voluntary programs can achieve specific environmental benefits only if decisions concerning eligibility criteria, payment base, and payment limitations consider the type of benefits sought. For example, under EQIP's initial rule, confined animal feeding operations (CAFOs—the largest livestock operations) could not have waste management facilities funded under the program, even though half of EQIP funds were earmarked for livestock-related concerns. Congress eliminated that constraint in 2002, and a substantial share of EQIP funds now helps offset the costs to CAFOs of complying with EPA's new Clean Water Act regulations addressing animal waste management.

A broad base of applicants provides program decisionmakers leverage in pursuing environmental improvements. However, there can be too much of a good thing. The administrative burden of accurately evaluating a large number of applications can be high. Another side effect of too many applicants (relative to available funds) is that qualified producers may be discouraged from applying if the program is deemed to be too competitive. This may have been the case with EQIP initially. Great enthusiasm surrounded the program at its inception, with over 70,000 applications a year in 1997 and 1998. But applications dropped to below 40,000 in 2001 as the perception spread that acceptance was difficult.

Program design influence on transaction costs can be important. How does one create a competitive program without inducing producers to promise more than they can deliver? This is an important question because monitoring and enforcement of contractual agreements, besides being unpopular, are very costly. This is particularly true for working-land programs with many eligible practices. EQIP was structured to be as environmentally cost-effective as possible. Yet, 17 percent of contracts faced withdrawal of one or more of the conservation practices agreed to in the conservation plan. Thus, some expected environmental benefits as approved in the conservation plan proved illusory (Cattaneo, 2003).

In a policy environment where it is costly to determine damages and enforce them, the government may prefer not to pursue action against producers who do not fully adhere to their conservation contracts. However, if increasing enforcement is not viable, the government may modify the incentives that lead to withdrawing practices prematurely. Many modifications to EQIP introduced by the 2002 FSRI Act may reduce the producer's incentive to withdraw practices. Shorter contracts, allowing more than one contract per tract of land, and elimination of the bidding procedure will likely contribute to follow-through, making the benefits from the program more certain.

Design decisions can lead to unintended consequences. When payments exceed participation costs for some producers, the potential exists for unintended consequences. Like most other agricultural and agri-environmental payments, WLPPs are tied to land management, so unintended consequences are likely to include changes in land use or land values.

Payments that exceed production costs can encourage producers to shift land use—changes that are typically an unintended consequence of policy. For example, if the program increases (decreases) the profitability of crop production relative to other land uses, producers may shift land from (to) forest or grazing use to (from) crop production. Land use conversion is a particular concern for CSP implementation, because tiered payments for cropland are larger than those available on other types land. Producers could gain by the conversion of some pastureland to crop production and, in the absence of provisions to limit land use change, could seriously undercut environmental gains. Even if the program results in environmental gains on land already in crop production, expanding the area in crop production could offset those gains to the extent that crop production is more damaging to the environment than forest or grazing use (see Claassen et al., 2001, for a broader discussion). These concerns are addressed in CSP by limiting eligibility to land that was cropped in at least 4 of the 6 years prior to enactment of the program.

Land values may also be artificially inflated due to capitalization of program benefits. This is the logical outcome of land-based farm support payments. For example, early (pre-1990) CRP payments were capitalized into the value of low-quality land that received payments higher than the market value of such land (Shoemaker, 1989). WLPPs could increase land values unintentionally through capitalization of payments if conservation payments exceed conservation costs, if payments are tied to agricultural land, or if payments are viewed as long-term in nature. Significant land value effects are unlikely to flow from cost-sharing in programs like EQIP. However, they could occur under CSP, where payments may exceed producer conservation costs.

Not all changes in land values are unintended, however. Conservation improvements can also increase the value of the land by maintaining soil productivity, improving or eliminating gullies that can hinder farming operations, and slowing the outflow of other production inputs like nutrients. Structural practices like terracing, because they are long-term investments, may be most effective in enhancing land values. Management practices, such as conservation tillage or precision agriculture, may also maintain soil structure and increase organic matter, and thus increase the intrinsic value of the land.

The equity objective, revisited. Some WLPPs may not only aim to provide cost-effective environmental benefits, but to do so equitably, which complicates considerably the choice of policy instruments for WLPPs. Two examples of tradeoffs that emerge from the joint consideration of efficiency and equity are provided by (1) the bid-down provisions in EQIP and (2) the inclusion of stewardship payments in CSP.

By revealing producers' willingness-to-accept (WTA)—a combination of practices offered and payments accepted—the EQIP bidding process was cost-effective. From an equity point of view, however, bidding may also be viewed as discriminating against producers who cannot afford to bid down to get accepted into the program. Bidding on EQIP financial assistance was prohibited by the 2002 Farm Bill. To limit cost in the absence of bidding, USDA established a default cost-share rate of 50 percent for all practices, with case-by-case exceptions for high-priority practices. This shift from bid-based to fixed-rate cost-sharing may result in higher rates of cost-sharing for most practices, reducing program cost-effectiveness. In some cases, where higher rates of cost-sharing could be justified on the basis of potential environmental benefit, exceptions to the default cost-share could be used to target environmental priorities. Even so, such targeting is likely to be most effective at the evaluation phase, where a proposal can be assigned a score based on its environmental potential (especially true if site-specific factors are considered in assigning points).

Equity is often cited as a reason for including "good actors" in programs like CSP. Eligibility for stewardship payments is viewed by some as a reward for good stewardship. Maintenance payments also serve to prevent environmental damage when economic conditions change such that a producer might remove a beneficial conservation structure (e.g., by plowing under buffer strips) or discontinue a conservation practice (e.g., by overapplying nitrogen fertilizer). Producers who maintain these practices without compensation may be at a competitive disadvantage relative to producers who do not. Some argue that, in the long run, excluding good actors will discourage producers from undertaking future environmental improvements on their own, possibly resulting in perverse incentives against conservation. Critics of maintenance payments argue that these payments do little to improve the environmental performance of agriculture and divert limited funds from activities that could improve overall environmental performance.

How do different programs interact? Given the overlap between different agricultural programs in terms of eligibility, many agricultural producers could be directly affected by several programs and indirectly by others. These programs affect a wide range of agricultural production decisions, and many have environmental implications. While some programs directly address agri-environmental problems, others may affect agri-environmental performance through agricultural input and land use (e.g., commodity program and tax policies). Coordination of all such programs pays obvious dividends in avoiding duplication of effort, eliminating conflicts among programs, and ensuring that where programs can work together or complement one another, these complementarities are fully realized. This is particularly true now that agri-environmental payment programs are growing in size relative to commodity programs. Of course, coordination would increase the administrative effort needed to implement programs. A complete analysis of cost-effectiveness would include both the benefits and the costs of program coordination.

Eligibility can eliminate duplication by preventing producers from receiving payments from two programs on the same land. For example, it makes little sense to continue commodity program payments on land enrolled in a land retirement program. Annual land retirement payments are based on cash rental rates, which incorporate the value of farm program payments. Receipt of land retirement and commodity payments would constitute "double dipping"—receiving overlapping benefits from more than one program. Likewise, land enrolled in the CRP or the Wetland Reserve Program (WRP) cannot also be enrolled in EQIP or the CSP.

On the other hand, some programs are complementary and producers may legitimately participate in two or more programs simultaneously. For example, a producer located in an urban fringe area may benefit from farmland protection payments, receive commodity payments, and improve environmental performance by receiving WLPP payments. Programs may also be complementary in the sense that each has a unique function or "niche" that is not filled by another program. In this case, coordination can improve overall environmental gain by ensuring that eligibility and other enrollment mechanisms direct producers toward the program that best advances the overall goals of agri-environmental policy. For example, it may be more cost-effective to retire land than attempt to address resource concerns with a working-land program. That's almost certainly true for many wetland services (wildlife habitat, filtering runoff, and floodwater retention). Other wildlife habitat may become viable only when the ecosystem is fully established, a process that may take years, and thus can best be provided with a long-term (10 years or more) dedication of that land to that purpose. A case can be made for coordination between programs that encourage new conservation effort (e.g., EQIP) and those that attempt to reward, and more importantly, preserve that conservation effort (e.g., CSP).

Eligibility criteria have also been used to reduce conflict among programs. Agri-environmental programs can interact with commodity programs because both can influence agricultural input use. A classic case of conflict and subsequent coordination is the compliance mechanisms adopted in the Food Security Act of 1985. There was evidence in the late 1970s and early 1980s to suggest that commodity programs were encouraging specific types of crop production with the highest potential for environmental damage (Watts et al., 1983; Reichelderfer, 1985). As such, commodity programs were working at cross-purposes with programs designed to conserve soil and preserve wetlands. Compliance mechanisms, adopted as part of the

1985 Food Security Act, made eligibility for commodity and many other Federal agricultural programs contingent on certain soil conservation and wetland preservation efforts (Claassen et al., 2004). Thus, consistency between commodity programs and other agri-environmental programs was increased.

Finally, payment limits or contract flexibility may become coordination issues if they affect producers' program choices. Small operations will generally not be affected by payment limits, but producers who are affected will base their participation on the effective "incentive rate" considering the payment ceiling. For example, EQIP at first provided up to 75 percent cost-share, but the $50,000 payment limitation made the effective rate progressively lower for farms undertaking conservation expenditures with total costs above $66,700.

What are the environmental benefits of working-land payment programs? If WLPPs grow in terms of budget and affected acres, the demand for estimating the benefits associated with these expenditures is sure to follow.[1] Because of the complexity of farm household decisionmaking, and the nonpoint source and site-specific nature of agri-environmental problems, measuring the benefits of agri-environmental conservation programs is data-demanding and technically challenging. Estimating the environmental benefits of a given program would require identifying those changes in farmer decisions directly attributable to the program, measuring the environmental change associated with those farmer decisions, and, ideally, assigning economic values to those environmental improvements. But valuing these "nonmarket" amenities is difficult. To date, good information on their values exists for only a subset of attributes, such as the offsite costs of soil erosion, or only at a local scale, like recreational values associated with pheasant viewing and hunting in the Prairie Pothole region. In the absence of economic values, changes in environmental metrics—like reduced nitrogen concentrations in water bodies and enhanced soil carbon levels—can provide a benchmark upon which to gauge program performance.

[1]A benefit-cost analysis is, in fact, required for any U.S. government program with budgetary implications greater than $100 million. The exercise has been carried out twice for EQIP (USDA - NRCS, 1996 and 2003) and is currently ongoing for CSP (USDA - NRCS, 2004). What emerges from these studies is that information is scarce concerning the benefits on the ground of installed conservation practices. Typically, practices are bundled by natural resource concern addressed, and average estimates are taken from the available literature.

USDA has embarked upon an interagency effort designed to conduct a national assessment of environmental benefits and effects of 2002 Farm Bill programs (www.nrcs.usda.gov/technical/NRI/ceap/). Achieving that goal will depend on the ability to identify and measure those indicators that link to farmers' responses to conservation programs and to the environmental attributes those programs aim to influence (Smith and Weinberg, 2004).

Realizing the potential of WLPPs within the broader agri-environmental policy context. Calls for improved program coordination, balancing multiple objectives, and "global" assessments of program benefits could all be addressed by developing a comprehensive conservation benefits index, similar to our Aggregate Environmental Index (AEI), and using it to rank all proposed conservation and environmental projects. USDA's 2001 policy vision statement, *Food and Agricultural Policy: Taking Stock for the New Century*, describes the possible creation of an expanded index that would rate improvements in environmental, conservation, and rural community categories, with scores based on the expected benefits during the time of enrollment. Producers could propose the land management options and project durations that work best for them.

Cost-effectiveness of all programs would increase by allowing proposals for new activities on working lands to compete with proposals for retiring environmentally sensitive lands or maintaining existing practices. Similarly, single-year activities could compete with multiyear activities. Proposals for management activities on working lands, like switching from conventional to conservation tillage, would have lower opportunity costs than retiring the land, and so should generate a lower bid. At the same time, conservation tillage would likely receive a lower benefits score than land retirement. Contracts would be awarded to owner/operators with the greatest benefit index score relative to the bid. Moving to a single, comprehensive index would require considerable resources and a multiyear phase-in. For example, CRP and EQIP have very different approaches to constructing a benefit index (see box, “Defining Program Objectives,” p. 10). Those approaches could form a starting point for thinking about a single comprehensive index.

The estimation of environmental gains from conservation expenditures could also benefit from the data gathering needed to build a comprehensive environmental index. Smith and Weinberg (2004) note that reconciling model predictions with actual observations is crucial for a successful conservation program that relies on voluntary participation. One possible approach would be to combine index data obtained as part of producers’ agri-environmental program applications with current environmental data collection, as in the Natural Resources Inventory (NRI, USDA-NRCS, 1997). Even before the introduction of a comprehensive benefits index, such an approach could be tested with current CRP and EQIP indices used to rank applications. The information contained in these indices is not a physical measurement of impact, but rather an expected impact. Data collection at the plot level for a subsample of participants (where available) would assess the reliability and/or calibrate ex-ante benefit estimates. Combining producers’ WTA, estimated from past participation or solicited through a bidding process, with calibrated environmental indices for multiple practices can reduce implementation costs and vastly improve cost-effectiveness.